

R E M A R K S

Careful review and examination of the subject application are noted and appreciated.

The present invention concerns a device comprising (i) an outer portion comprising an electrically insulative material having dimensions effective to prevent or inhibit plasma arcing to an electrically conductive surface of a plasma processing chamber aperture where a flange section may be configured to remain outside of the plasma processing chamber aperture and (ii) an inner opening, completely surrounded by the electrically insulative material of the outer portion, having dimensions effective to enable transmission of a physical signal, a gas, a gas mixture or other material through the device.

SUPPORT FOR AMENDMENT TO THE SPECIFICATION

Support for the amendment to the specification can be found, for example, in FIG. 1 as originally filed and in the specification on page 10, line 21 through page 11, line 2 as originally filed. As such, no new matter has been added.

SUPPORT FOR CLAIM AMENDMENTS

Support for the amendment to claims 1, 5-6, 8, 12 and 14 can be found, for example, in FIGS. 1 and 2(A-B) as originally filed and in the specification on page 10, line 17 through page 11,

line 2 as originally filed. Support for the amendment to claim 13 can be found, for example, in the specification on page 9, lines 4-9 as originally filed. As such, no new matter has been added.

CLAIM REJECTIONS UNDER 35 U.S.C. §112

The rejection of claims 11 and 15 under 35 U.S.C. §112, second paragraph, has been obviated by appropriate amendment and should be withdrawn. As amended in the Amendment filed September 25, 2001, claim 11 no longer contains the cited limitation "said inserting." As such, the rejection based on the limitation "said inserting" has been obviated and should be withdrawn.

Furthermore, claim 1 has been amended to include the limitation "a flange section configured to remain outside of said plasma processing chamber aperture." As such, the rejection of claim 11 based on the cited limitation in claim 9 (i.e., the aperture having the device of Claim 1, therein, then...) has been obviated (i.e., as presently claimed, a flange section of the device is configured to remain outside the plasma processing chamber aperture) and the rejection should be withdrawn.

Support for the limitation "a length of a channel section" in claim 15 can be found, for example, in FIGS. 1 and 2A as originally filed and, for example, in the specification on page 9, line 19 through page 10, line 6 (i.e., the dimensions of the channel sleeve are also effective to fit in the plasma processing

chamber aperture within one or more predefined tolerances), page 10, lines 17-20 (i.e., the channel sleeve 10 may have two sections along the length L, a lower section 11 to fit inside the chamber aperture) and page 13, lines 5-8 (i.e., the aperture 20 may comprise a chamber interface section 22 and a channel section 24) as originally filed. As such, the limitation "a length of a channel section" as recited in claim 15 has sufficient antecedent basis and the rejection should be withdrawn.

Furthermore, claim 1 has been amended to include the limitation "a flange section configured to remain outside of said plasma processing chamber aperture." Similarly, claims 12 and 14 which depend on claim 1 and from which claim 15 depends have been amended to include the limitation of the flange section. In particular, presently pending claim 1 provides a device comprising a flange section configured to remain outside of the plasma processing chamber aperture, claim 12 provides the device further comprises a lower section having a first width effective to fit the plasma processing chamber aperture and the flange section, claim 14 provides the lower section has a first length and the flange section has a second length, and claim 15 provides the first length (i.e., the length of the lower section) is greater than or equal to a length of a channel section of the plasma processing chamber aperture. As such, the rejection of claim 15 based on the limitation "a length of a channel section" as being indefinite and

not sufficiently descriptive has been obviated and the rejection should be withdrawn.

CLAIM REJECTIONS UNDER 35 U.S.C. §102

The rejection of claims 1-14, 16 and 20 under 35 U.S.C. §102 as being anticipated by Foster et al. '640 (hereinafter Foster) has been obviated by appropriate amendment and should be withdrawn.

Foster discloses a method for producing titanium-containing thin films by low temperature plasma-enhanced chemical vapor deposition using a rotating susceptor reactor (Title).

In contrast, the presently pending invention claims a device comprising an electrically insulative material having a flange section that may be configured to remain outside of a plasma processing chamber aperture. Foster appears silent regarding a device comprising an electrically insulative material having a flange section configured to remain outside of a plasma processing chamber aperture, as presently claimed. As such, the presently pending invention is fully patentable over Foster and the rejection should be withdrawn.

In particular, Foster discloses an RF line 256 and isolator sleeves 270, 271. The isolator sleeves 270, 271 are made of ceramic insulator materials (see Foster at FIG. 2B and column 18, lines 6-43). Foster fails to disclose or suggest a device

comprising an electrically insulative material having a flange section configured to remain outside of a plasma processing chamber aperture, as presently claimed. As such, the presently pending invention is fully patentable over Foster and the rejection should be withdrawn.

CLAIM REJECTIONS UNDER 35 U.S.C. §103

The rejections of claim 17 under 35 U.S.C. §103(a) as being obvious over Foster and claims 15, 18 and 19 as being obvious over Foster in view of Curtis '068 has been obviated by appropriate amendment and should be withdrawn. Claims 15 and 17-19 depend, directly or indirectly, from claims 1 and 12 which are believed to be allowable.

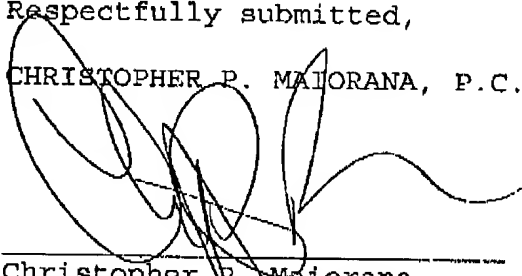
Accordingly, the present application is in condition for allowance. Early and favorable action by the Examiner is respectfully solicited.

The Examiner is respectfully invited to call the Applicants' representative should it be deemed beneficial to further advance prosecution of the application.

If any additional fees are due, please charge our office  
Account No. 50-0541.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

Please replace the paragraph beginning on page 10, line 17 with the following:

In a preferred embodiment, the channel sleeve 10 may have two sections along the length L, a lower section 11 to fit inside the chamber aperture, and a higher section 13 to remain outside the aperture. The width(s) W1 of the lower section 11 is/are generally about the same as the corresponding chamber aperture width. The width(s) W2 of the higher section 13 is/are generally larger than the corresponding chamber aperture width. The higher section 13 is generally flange shaped.

VERSION WITH MARKINGS TO SHOW CHANGES MADE

1. (TWICE AMENDED) A device comprising:

an outer portion comprising an electrically insulative material, having (i) dimensions effective to [(i)] prevent or inhibit plasma arcing to an electrically conductive surface of a plasma processing chamber aperture and (ii) a flange section configured to remain outside of said plasma processing chamber aperture [fit said plasma processing chamber aperture within a predetermined tolerance]; and

an inner opening, completely surrounded by the electrically insulative material of the outer portion, having dimensions effective to enable transmission of a physical signal, a gas, a gas mixture or other material through the device.

5. (TWICE AMENDED) A plasma processing chamber having:

at least one aperture therein, the at least one aperture having an exposed electrically conductive surface, and

a device inside the aperture, the device comprising an electrically insulative material and having

(i) dimensions effective to [(a)] prevent or inhibit plasma arcing to the exposed electrically conductive surface of the aperture [and (b)] , wherein a flange section of said device is configured to remain outside said aperture [fit said aperture within a predetermined tolerance]; and



(ii) an inner opening completely surrounded by the electrically insulative material, the inner opening having dimensions effective to enable transmission of a physical signal, a gas, a gas mixture or other material through the device.

6. (TWICE AMENDED) A method of making a plasma processing chamber, the chamber having at least one aperture therein, the at least one aperture having an exposed electrically conductive surface, the method comprising inserting a device into  
5 the aperture, the device comprising an electrically insulative material and having:

dimensions effective to [(i)] prevent or inhibit plasma arcing to the exposed electrically conductive surface of the aperture [and (ii)] wherein a flange section of said device is  
10 configured to remain outside said aperture [fit said aperture within a predetermined tolerance]; and

an inner opening completely surrounded by the electrically insulative material, the inner opening having dimensions effective to enable transmission of a physical signal,  
15 a gas, a gas mixture or other material through the device.

8. (TWICE AMENDED) A method of processing a workpiece, comprising:

exposing the workpiece to a plasma in a chamber, the chamber having at least one aperture therein, the at least one aperture having

1) an exposed electrically conductive surface; and  
2) a device in the aperture, the device comprising an electrically insulative material and having

(i) dimensions effective to [(a)] prevent or inhibit plasma arcing to the exposed electrically conductive surface of the aperture [and (b)] wherein a flange section of said device is configured to remain outside said aperture [fit said aperture within a predetermined tolerance]; and

(ii) an inner opening completely surrounded by the electrically insulative material, the inner opening having dimensions effective to enable transmission of a physical signal, a gas, a gas mixture or other material through the device; and

(iii) transmitting a physical signal, a gas, a gas mixture or other material through the device into or out from the chamber.

12. (AMENDED) The device according to claim 1, further comprising:

a lower section having a first width effective to fit the plasma processing chamber aperture within [said] a predefined tolerance; and

[a higher] said flange section having a second width that is greater than a corresponding width of said plasma processing chamber aperture.

13. (AMENDED) The device according to claim 12, wherein said [higher section is disposed outside of] device is held in said plasma processing chamber aperture via a wire loop configured to hold said device under typical plasma processing conditions.

14. (AMENDED) The device according to claim 12, wherein said lower section has a first length and said [higher] flange section has a second length.